

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 (Currently Amended) A data retrieval system for causing a computer to retrieve data being stored in a database, said retrieval system comprising: a database storing data as a vector digitized based on a keyword; a means for generating a residual vector from said data, said residual vector corresponding to a vector in which an element corresponding to a contribution component in a direction of a basic vector calculated is subtracted from a previously obtained residual vector, the basic vector and the residual vector a newly generated residual vector lie in an orthogonal relationship, to compute a covariance matrix and an eigenvector of said covariance matrix, and for generating and storing a set of basic vectors from a set of said computed eigenvectors; a means for reading out said data and at least one of said eigenvectors from a memory database, and for computing a contribution vector of said eigenvector to said data, and for contracting or enlarging a residual vector to store; and a means for selecting a keyword to be used for labeling clusters according to a similarity between said stored basic vector and said data, and a weight on said similarity so as to store the keyword in a memory database; means for classifying data into clusters of documents having the same or similar keywords and depending on a similarity between the stored basic vector and the data; and a means for outputting cluster data of a cluster to a graphical user interface system for displaying the cluster data.

2 (Originally Presented) The data retrieval system according to claim 1, comprising a means for making said basic vectors orthogonal.

3 (Originally Presented) The data retrieval system according to claim 1, wherein said means for selecting the keyword to be used for labeling clusters to store the keyword in the memory database further comprises a means for determining the weight on said similarity

to said keyword and a means for storing a certain number of keywords in a descending order in the ~~memory~~ database in connection with said weight.

4 (Currently Amended) A data retrieval method for causing a computer to retrieve data stored in a database, said data retrieval method comprising the steps of:
reading out data from a database storing data as a vector digitized based on a keyword;
computing and storing a covariance matrix and an eigenvector of said covariance matrix, using said data;
generating and storing a set of basic vectors from a set of said computed eigenvectors;
reading out said data and at least one of ~~said eigenvectors~~ eigenvector from a ~~memory~~ the database, and computing and storing a contribution vector of said eigenvector to said data;
and computing a residual vector from said data and said eigenvector, and contracting or enlarging a residual vector by reading out said contribution vector to compute and store a new eigenvector; and classifying data into clusters of documents having the same or similar keywords and depending on a similarity between the stored basic vector and the data; and a means for outputting cluster data of a cluster to a graphical user interface system for displaying the cluster data.

5 (Originally Presented) The data retrieval method according to claim 4, further comprising a step of selecting a keyword to be used for labeling clusters from a similarity between said stored basic vector and said data and a weight on said similarity to store the keyword in the ~~memory~~ database.

6 (Currently Amended) The data retrieval method according to claim 5, wherein said step of selecting the keyword to be used for labeling clusters further comprises a step of determining the weight on said similarity to said keyword and storing a certain number of keywords in a descending order in the ~~memory~~ database in connection with said weight.

7 (Currently Amended) A computer executable program product comprising a computer readable media having computer executable program thereon for implementing a data retrieval method for causing a computer to retrieve data stored in a database, said program comprising the steps of: reading out data from a database storing data as a vector digitized based on a keyword; computing and storing a covariance matrix and an eigenvector of said covariance matrix, using said data; generating and storing a set of basic vectors from a set of said computed eigenvectors; reading out said data and at least one ~~of said eigenvectors~~ eigenvector from a ~~memory database~~, and computing and storing a contribution vector of said eigenvector to said data; and computing a residual vector from said data and said eigenvector, and contracting or enlarging a residual vector by reading out said contribution vector to compute and store a new eigenvector in the database.

8 (Currently Amended) The program product according to claim 7, said program further comprising a step of selecting a keyword to be used for labeling clusters from a similarity between said stored basic vector and said data and a weight on said similarity to store the keyword in the ~~memory database~~.

9 (Currently Amended) The program product according to claim 7, said program further comprising a step of making said basic vectors orthogonal before computing said residual vector.

10 – 12. (Canceled)

13 (Withdrawn) A graphical user interface system for displaying the computer retrieved data, said graphical user interface system comprising: a database storing data as a vector digitized based on a keyword; a means for computing a basic vector from said data to store in a memory; a means for classifying data into clusters depending on a similarity between said stored basic vector and said data, for counting the number of data included in said cluster, and for selecting a keyword to be used for labeling according to a weight on said

similarity so as to store in a memory at least said number of data and said keyword as a pair; and a means for displaying said cluster in spiral in order of the number of data of said cluster, and performing a different rendering processing for each adjacent cluster.

14 (Withdrawn) The graphical user interface system according to claim 13, wherein said means for computing the basic vector comprises a means for reading out said data and at least one of said eigenvectors from a memory, and computing and storing a contribution of said eigenvector to said data.

15 (Withdrawn) The graphical user interface system according to claim 13, wherein said means for displaying said cluster in spiral comprises a means for displaying the clusters from outside to inside in order of the clusters having a greater number of data.

16 (Withdrawn) A program for enabling a computer to implement a graphical user interface for displaying the computer retrieved data, said program comprising the steps of: reading data from a database storing data as a vector digitized based on a keyword; computing a basic vector from said data to store in a database; classifying data into clusters depending on a similarity between said stored basic vector and said data, for counting the number of data included in said cluster, and for selecting a keyword to be used for labeling according to a weight on said similarity so as to store in a memory at least said number of data and said keyword as a pair; and displaying said cluster in spiral in order of the number of data of said cluster, and performing a different rendering processing for each adjacent cluster.

17 (Withdrawn) The program according to claim 16, wherein said step of computing the basic vector comprises a step of reading out said data and at least one of said eigenvectors from the memory, and computing and storing a contribution of said eigenvector to said data.

18 (Withdrawn) The program according to claim 16, wherein said step of displaying said cluster in spiral comprises a step of arranging the clusters from outside to inside in order of the clusters having a greater number of data.

19 (Withdrawn) A computer readable storage medium storing a program for enabling a computer to implement a graphical user interface for displaying the computer retrieved data, said program comprising the steps of: reading data from a database storing data as a vector digitized based on a keyword; computing a basic vector from said data to store in memory; classifying data into clusters depending on a similarity between said stored basic vector and said data, for counting the number of data included in said cluster, and for selecting a keyword to be used for labeling according to a weight on said similarity so as to store in a memory at least said number of data and said keyword as a pair; and displaying said cluster in spiral in order of the number of data of said cluster, and performing a different rendering processing for each adjacent cluster.

20 (Withdrawn) The storage medium according to claim 19, wherein said step of displaying said cluster in spiral comprises a step of arranging the clusters from outside to inside in order of the clusters having a greater number of data.